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(54) **SPRITE-BASED VIDEO CODING SYSTEM
 WITH AUTOMATIC SEGMENTATION
 INTEGRATED INTO CODING AND SPRITE
 BUILDING PROCESSES**

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345/435; 348/584; 348/586; 348/598; 358/426;
358/450

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(57) ABSTRACT

A sprite-based coding system includes an encoder and
 decoder where sprite-building is automatic and segmenta-
 tion of the sprite object is automatic and integrated into the
 sprite building as well as the coding process. The sprite
 object is distinguished from the rest of the video objects on
 basis of its motion. The sprite object moves according to the
 dominant component of the scene motion, which is usually
 due to camera motion or zoom. Hence, the sprite-based
 coding system utilizes dominant motion, to distinguish
 background images from foreground images. The sprite-
 based coding system is easily integrated into a video object-
 based coding framework such as MPEG-4, where shape and
 texture of individual video objects are coded separately. The
 automatic segmentation integrated in the sprite-based cod-
 ing system identifies the shape and texture of the sprite
 object.

10 Claims, 11 Drawing Sheets

